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ABSTRACT

Wild foods are ubiquitous motivational tools for teaching botany, environmental education, cultural foodways, and survival. Edible wild plants are wild plants endowed with one or more parts that can be used for food if gathered at the appropriate stage of growth and properly prepared. The components of this definition are discussed with implications for safety. Educators must always take care not only to make a proper identification, but also make sure that only the "proper parts" are collected, at the "appropriate stages of growth," and "properly prepared." Three reasons that wild foods make a personal motivational connection with learners is that: (1) they stimulate a perspective shift from ignoring the natural world to realizing and appreciating the wonders of nature; (2) they represent a release from dependence and instill confidence that the student could fall back on wild foods if necessary; and (3) they provide romance and adventure, providing food in potential survival situations. Edible wild plants can act as experiential motivators in other areas: botany, Native American culture, environmental education, and survival training. Three major obstacles to using wild foods in experiential education programs are a lack of truly knowledgeable educators, possible liability associated with wild foods, and a concern for harming a fragile environment. Strategies are offered for overcoming these obstacles. (Author/SV)

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EDIBLE WILD PLANTS FROM NEIGHBORHOOD TO WILDERNESS: A CATALYST FOR EXPERIENTIAL EDUCATION

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Abstract
Wild foods are ubiquitous motivational tools for teaching botany, environmental education, cultural foodways and survival. Few motivational tools involve humans so intimately as those used for oral stimulation, sustenance, and/or survival. The purpose of this workshop is to revisit a traditional content area and educational vehicle for experiential educators.

In my experience, in the right context, edible wild plants provide an exciting content and motivational topic for persons in experiential education situations. They provide an allure, an intrigue, a connection with our more earthly selves, a chance to play at or be a more confident and competent provider/survivor, a way to develop one more kind of independence, and a means to supplement our conventional food sources. This paper is intended to provide a common sense discussion of the potential for using the topic of edible wild plants to experientially engage students in a variety of topic areas. But before we go on to discuss these motivations, let's discuss the definition of edible wild plants.

Edible Wild Plants Defined
Edible wild plants are wild plants endowed with one or more parts that can be used for food if gathered at the appropriate stage of growth and properly prepared (Kallas, 1996a). Let's divide this definition into its component parts and discuss the significance of each.

"One or more parts": The term "Edible wild plant" can be misleading. At face value this means you can eat the plant. But this interpretation is dangerous. Some edible plants also contain poisonous parts. All but the ripe fruit of the tomato plant is poisonous! All but the flowers and the ripe fruit of blue elderberry (*Sambucus canadensis* [eastern] & *Sambucus cerulea* [western]) is deadly poisonous with cyanide! Both tomato and elderberry are considered edible plants and poisonous plants. One key to the successful and safe use of wild plants for food is to focus on the part or parts known to be edible. Generalizing and improvising by eating unspecified parts of plants can be deadly. Examples: Elderberry & Rhubarb

"Gathered at the appropriate stage of growth": Some plant parts become poisonous with age. Common milkweed (*Asclepias syriaca*) produces a pod containing seeds. When it's young and tender, before its seeds develop, the pod is an excellent cooked vegetable. Once the seeds reach maturity, the pod is poisonous — and that poison cannot be cooked out. If you wish to consume a plant part, gather it at its edible-stage. Not paying attention to growth stage can lead to a deadly conclusion. Examples: Milkweed & Elderberry

"Properly prepared": Many "edible" plant parts do not become truly edible or palatable unless they are processed in some way. Processing could involve, among other things, physically removing certain parts of the plant (like seeds from a fruit or the rind of a root), leaching water soluble substances out of a plant part, or heating to a certain temperature. Let's go back to the common milkweed. Even the edible parts, in the raw form, carry substances called cardiac glycosides that affect the heart. These are water soluble substances that can be easily removed by boiling — where you discard the water. Once leached, the appropriate plant parts are safe to eat. Examples: Milkweed & May Apple

So, the biggest and most dangerous mistakes that individuals or educators make when using wild foods is that they improvise and generalize regarding edibility of plant parts. Educators must always take care to not only make a proper identification, but to make sure that only the proper parts are collected, at the appropriate stages of growth, and properly prepared.

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Edible Wild Plants as a Content Area

While their study can help students learn content areas like botany, wild edibles are a wonderful content area in and of themselves. In today's world people are dependent on supermarket foods. Many young children have no direct connection to the earth and its products. The supermarket is "the" source of sustenance. We are dependent on it and the money it takes to buy its products. Good or bad, that's how it is. It's created a psychological reality. Here are three non-exclusive reasons that wild foods seem to make a personal/motivational connection with learners:

1. The wonder of nature: I cannot tell you how many times I've heard my students, of all ages, say in sincere enthusiastic outbursts, "Wow!" "Neat!" "Cool!","Bitchin'!" when first discovering actual edible plants. They are genuinely excited when a connection is made with a plant. The most important connection seems to be food where its "not supposed to be." It's sitting right there in from of them. They didn't have to plant it, buy it, manufacture it, or get it from their parents. All they have to do is reach out, grab it, and eat it. I cannot say too strongly how this affects some people — particularly people who live a mostly isolated life from nature. Individuals have paid me hundreds of dollars to learn this stuff. Children have gone from totally unconscious when regarding plants to insatiable students. This wonderment would probably be lessened if traditional knowledge and use of wild foods was common in our society and taught from birth. But for many people these days, plants are background pleasantries. People seem to like greenery in their lives — but most don't even know the names of plants that surround them, let alone wild plants. Food is one of the most important necessities in human existence. It stands to reason that something so free and easy for the picking creates such a big perspective shift to wonderment.
Examples: Marshmallows & Stinging nettle

There is no more intimate way to get involved with nature than to respectfully partake of it. You can enjoy the aesthetics of nature, live in it for a while, and make things from it. But the greatest intimacy is reached when you've taken your sustenance from something you've captured or gathered. Once you have this informed connection, the health of the environment becomes much more important. The growing needs, habitat, and reproduction of plants become more important. The knowledge and careful examination necessary to positively distinguish an edible from a poisonous look-a-like requires a respect and intimacy few other things demand. A greater appreciation for nature develops.

2. Independence: From personal experience, I can say that edible wild plants represent a freedom from dependence and movement towards independence. I cannot quantify for you the exact degree of this, but the independence thing is apparently a motivating factor for many of my students. So how do wild foods represent independence? Well again, you don't have to buy them and they're there for the picking. All that's needed is a knowledge of plants, you and the elements. In this world many get the feeling that life is out of their control. They're stuck in the treadmill and dependent on it. Wild foods, in some way provide a respite: you're transported out of the treadmill and into the simple primal world of a gatherer. For a moment you are in control and deeply engaged in the present. The more you learn, the more in control and confident you become. Its can be very much like the spiritual training you get in karate. You may never have to use those fighting skills, but even if you don't, you now walk with confidence. You may never "have" to eat wild foods, but if you ever needed to, you walk with confidence that you could.
Examples: Chestnuts & Wild Spinach

3. Romance & high adventure enhancement: There is no question that much of my personal motivation to learn wild foods was the romance of it all. Imagine a Native American, a Jeramiah Johnson, an Indiana Jones, a MacGyver, a Shao-Lin Priest or you — casually gathering sustenance while embarking on some great adventure. Imagine being stuck in a real survival situation and you are providing the frightened and tired group with copious amounts of totally unexpected food. This is immediate gratification. There is no need to wait for traps to be made, for bait to be found, or for game to walk into your lap. There is no need to go with the discomfort of hunger during the other uncertainties that exist while hoping to be rescued. Examples: Broad Leaf Dock (Kung Fu) & Amaranth (Captain Scott O'Grady, Bosnia, 1995)

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Edible Wild Plants as Experiential Motivators for Other Content Areas

The benefit of experiential education is that something is more likely to be learned with experience than if a more passive approach is taken. If indeed personal motivational connections with edible wild plants exists, then topics traditionally thought of as boring can take on new, more exciting meanings for learners. Here are some examples where edible plants can stimulate experience:

Botany: Studying plant morphology, you are trying to learn the difference between two simple but meaningless (to you) leaf arrangements. Its all too academic. Then you learn that the one arrangement is found on all mint plants which you can immediately smell and taste. Its leaf arrangement becomes instantly memorable. You make some tea and now its with you forever. Examples: Wild Mint & Wild Mustard

Anthropology: If you want to understand a Native American culture, you need to understand how their lives revolved around food sources. Wild foods helped determine where they traveled, where they camped, when they fought, how they socialized, their views of territory, and many spiritual matters. Finding, gathering, processing, preparing, and eating Native American wild foods, like they did, would tell you so much more about their culture than reading history books. Examples: Wapato & Acorns

Environmental Education: Just think how more relevant environmental education would be if all of nature was viewed as not just unknown wild "stuff" but an edible garden. Every time someone dumped solvent in a field, that would be solvent poisoning your wild lettuce. Every time someone sprayed for pests, that would be pesticides poisoning your huckleberries. Every time motor oil spilled from a motorboat, that would be petroleum in and on your wapato and fish. The more you relate to nature as a provider of food, the more it hits home that wild plants and animals must live in these conditions every day. Just a search in a city for non-contaminated edibles would be quite an experiential learning experience. Examples: Minor's Lettuce & Camas

In the pursuit of edible wild plants, the need for locating plants in their habitats, the need for proper identification, the necessity of knowing specific parts of plants, and gathering them at the appropriate stages of growth are essential. These needs develop a motivated interest in ecosystems, life cycles, plant reproduction, plant identification, natural history, and plant development.

Survival Training: One of the greatest obstacles to survival, be it unplanned wilderness survival, recreational survival, urban or rural survival, is an attitude and psychology of helplessness. This helplessness is exacerbated when food is scarce or unavailable. Food, while not as immediately necessary as shelter and water, is one of the most comforting things available to people in survival situations. And, as mentioned before, these foods are there for the picking — there is no time delay or hunting skill required. Example: Cattails

Overcoming Obstacles to Using Wild Foods as Experiential Education Tools

The three major obstacles to using wild foods in experiential education programs are a lack of truly knowledgeable educators, possible liability associated with wild foods, and a concern for harming a fragile environment. Let's discuss each one of these individually.

A Lack of Truly Knowledgeable Educators: So who trains the trainers? There currently is no such thing as a school certified to train instructors on the topic of edible wild plants. Few people have the botanical, human physiology, and food processing knowledge necessary to teach a wide spectrum of plants and their safe use by humans. Resource materials on wild edibles and plant identification are mixed in quality. These problems are all real. There are only a few genuine "experts" in North America and each of them has their own specialty and background. Most experts are willing to conduct in-depth training anywhere in North America, but that costs money that is usually not allocated for these kinds of purposes. The reasonable alternative is for teaching staff to learn a few really exciting plants (see George, 1995, Kallas, 1995 & Kallas, 1984, p. 48), that can be used over and over again for different student

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populations. State universities often have ethnobotanical studies, found in their libraries, of edible wild plants used by Native Americans from your area. Exciting plants can be chosen from these culturally-linked foods. Local botanists can help you make positive identifications of plants and point out poisonous look-alikes. All teaching staff would learn these plants in great detail from in-services where information would be shared. This shared knowledge would allow training events to continue even if there were important staff turnovers. And while an expert in edible wild plants is always good to have as a consultant, you can tap botanists, pharmacists, human physiologists, nutritionists, and anthropologists to help you learn what you need to know. All these resources can be used together to get a program off the ground. Just do your homework and enjoy the plants that you learn.

Liability is a Concern: I have been teaching about edible wild plants for over 18 years and have not been sued. There are several reasons for this. First and foremost, I do my homework (see Kallas, 1984 p. 51). I positively identify a plant, am familiar with its look-alikes, know the plant parts that can be used, the appropriate stage of growth to use it, and what preparation is necessary to make it edible. I also assume that every plant and plant part I do not know is poisonous. The knowledge basic to these concepts is not that daunting if you don't isolate yourself. Get help — work with others! Your local cooperative extension service, which can be found at every state university, can answer some questions and pass you on to others when they're at a loss. It is also imperative to try everything yourself on several different occasions before introducing it to students. Permission slips should be signed by everyone warning them of the following things: While it is rare, ordinarily safe plants in the wild may have some unique chemical attribute, or the soil could be contaminated causing some negative reaction. A particular student might have a unique physiology that makes them sensitive to certain foods that everyone else can eat.

If you act responsibly, problems you have no control over are rare. And of course, students with a history of food sensitivities should participate only on the advice of a physician. Most persons with food sensitivities know when to count themselves out. Some foods have more allergic potential than others (see Kallas, 1984, p. 49). Always monitor students so they don't accidentally pick the wrong plant or plant part. And avoid gathering from roadsides, sprayed lawns or other obviously contaminated places. Examples: Right-of-way & Man Spraying; Gibbons

A Concern for Harming a Fragile Environment: This is an important issue for all reasonable and responsible persons in the outdoors. Our civilization has destroyed so much of nature that we are hesitant to really get involved with it anymore. Important to using edible wild plants are the concepts of sustainability and aesthetics. These are the foundation for modern gathering etiquette (Kallas, 1996b, p. 3). Sustainability and aesthetics should <u>always</u> be associated with wild foods, by instructors. A sustainable approach to wild foods allows gathering in such a way that plant populations continue to flourish. So how does one do this?

1. Sustainability is not a problem with edible weeds. Pick as many as you wish from gardens, yards, and u-pick farms. Wild gourmet garden vegetables (see Kallas, 1995-6), as I call them, will grow back relentlessly, so worry not. Edible weeds are great for developing experiential learning curricula in schools, urban, and rural settings.
2. Never pick threatened or endangered species. Your local Sierra Club, Native Plant Society, Nature Conservancy, or Cooperative Extension Service should have the latest list of protected species.
3. Obtain permission before venturing onto any land — be it public or private. Each piece of land has its own rules of use. Getting permission may help prevent you from being shot.
4. Always observe the 1 in 20 rule. That rule states that if you do not see at least 20 of something in plain sight, don't pick one. For example, if you don't find twenty licorice ferns, don't uproot one. If you find a lone tree in fruit, leave at least 20 fruits for predation and propagation. Once over 20 plants, try not to gather over 10% of any population.
5. When plants are abundant and you can pick to your heart's content, never clear-cut. Always gather in a dispersed, 'thinning' fashion so that more plants grow back stronger the next time.
6. Never gather more that you need.

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7. Teach your students to follow these same principles.

The aesthetic part of gathering is simple. Assuming you are gathering sustainably, leave the resource in a condition that is visibly and functionally non-impacted. Try not to trample plants surrounding the ones you are gathering. Try to stay on trails or established walkways whenever possible. Treat the land with respect. Many Native Americans gave offerings to the land when food was taken. Our offering can be to return the soil and the ground cover to its original condition.

Summary:
Edible wild plants are an experiential education topic whose time has come, again. Wild foods can serve as a stand alone topic, or as a motivational topic within other areas of specialty like botany, anthropology, environmental education, and survival. As a content area, wild foods apparently stimulate in some students the wonder of nature, a sense of independence, romance, high adventure enhancement and an intimate appreciation of nature. The definition for edible wild plants is emphasized because its focus on plant parts, stage of growth and proper preparation help the enthusiast keep safe from potentially harmful mistakes. There are three obstacles to using wild edibles in experiential education programs. They are a lack of genuine experts, potential liability, and a concern for the destruction of the environment. These obstacles can be overcome.

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Biography

Dr. Kallas is the director of Wild Food Adventures. He has a Ph.D. in nutrition, a Masters in education, and an undergraduate major in biology. He's a trained botanist, skilled nature photographer, writer, researcher, and teacher. John has researched edible wild plants since 1970 and taught in colleges, universities, and to the general public since 1978. He started Wild Food Adventures in the Spring of 1993.

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